

REMARKS

Claims 1-16 are pending and finally rejected in the present application.

Reconsideration and allowance are hereby respectfully requested.

In maintaining and making final the rejection of claims 1, 5, 6, 8 and 9 under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,271,097 (Morris), the Examiner provided a Response to Arguments section, for which courtesy the Examiner is thanked. In the Response to Arguments section of the Final Office Action, the Examiner, in essence, states that the substantially coplanar structure of the present invention has not been adequately distinguished over the "quasi-coplanar" structure of the device of U.S. Patent No. 6,271,097 (Morris). Applicants submit that the express language of the claims does patentably distinguish the present invention over Morris.

The term "substantially" as used in patent claims is a recognized term of art. The Manual of Patent Examining Procedure (MPEP) recognizes that the term "substantially" is often used in conjunction with another term to describe a particular characteristic of a claimed invention. (MPEP §2173.05(b)(D)). Further, courts have held that the use of the term "substantially" to limit a particular characteristic or feature of a claim was definite where one skilled in the art would understand what was meant by the combination of the term "substantially" with the particular claim characteristic or feature. (See, e.g., *Andrew Corp. v. Gabriel Electronics*, 847 F.2d 819, 6 USPQ2d 2010 (Fed. Cir. 1988)).

Applicants respectfully submit that one skilled in the art of integrated circuit design and fabrication would understand that the term “substantially coplanar” as used in the present Specification and pending claims refers to an integrated circuit structure wherein different features or structures of the device have upper surfaces that are coplanar relative to each other, at least to within modern process limits familiar to one of ordinary skill in the art. In contrast, Applicants submit that a “quasi-coplanar” structure, by definition, is a structure that is not substantially coplanar.

The prefix “quasi-” and the term “quasi” are each defined by the on-line version of the Merriam-Webster dictionary as having “in some sense or degree” or as “resembling in some degree” a certain characteristic. (See <http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=quasi->, *Emphasis Added*). Black's Law Dictionary defines “quasi” as a “term used in legal phraseology to indicate that one subject resembles another, with which it is compared, in certain characteristics, but that there are intrinsic and material differences between them”. (*Black's Law Dictionary*, 4th ed.).

Further, and as an example of the impact “quasi” has upon the meaning of a word, the term “quasi-judicial” is defined as “having a partly judicial character by possession of the right to hold hearings” and as being “essentially judicial in character but not within the judicial power or function”. Similarly, the term “quasi-public” is defined as something which is “essentially public (as in services

rendered) although under private ownership or control." (<http://www.m-w.com/cgi-bin/dictionary?va=quasi-judicial>, *Emphasis Added*). Still similarly, the term "quasi-legislative" is defined as something which is "partly legislative character by possession of the right to make rules and regulations" and

5 "essentially legislative in character but not within the legislative power or function". (<http://www.m-w.com/cgi-bin/diction-ary?va=quasi-legislative>, *Emphasis Added*).

A pattern emerges when one analyzes the foregoing definitions and the effect of the meaning of the exemplary words when modified by the prefix

10 "quasi". Something which possesses or is of a quasi-character is only partly of that character and is not completely, entirely within, or substantially of that character. Something that is of a quasi-character has intrinsic and material differences relative to something that is substantially of that same character. Therefore, Applicants submit that the term "quasi-coplanar" as used in Morris

15 refers to a structure that may be "partly coplanar" but which is not completely or substantially coplanar, as that phrase would be understood by one of ordinary skill in the art, and as is recited in part by claim 1.

Since Morris fails to disclose each of the limitations recited in claim 1, it can not anticipate the claim. Accordingly, Applicants submit that claim 1 and

20 claims 2-8 depending therefrom are in condition for allowance, which is hereby respectfully requested.

The rejection of claim 9 under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,271,097 (Morris) was also made final. Amended claim 9 recites in part "a fourth compound semiconductor material at least partially within the opening, . . . the fourth compound semiconductor material having an upper

5 surface that is substantially coplanar with an upper surface of the third compound semiconductor layer". (*Emphasis Added*). Thus, in that regard, claim 9 recites subject matter that is substantially similar to the subject matter recited in part by claim 1. For the same reasons given above in regard to claim 1, Applicants submit Morris fails to disclose each and every limitation of claim 9, and therefore

10 does not anticipate claim 9. Accordingly, Applicants respectfully requests withdrawal of the rejection and allowance of claims 9 and claims 10-15 depending therefrom.

The rejection of claims 1, 5, 6, 8, 9, and 12-15 under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent No. 5,698,871 (Sakai, et al.) was also made

15 final. Claim 1 recites in part "forming a third compound semiconductor material upon at least a portion of the exposed first active layer and at least partially within the opening, wherein: the third compound semiconductor material has an upper surface that is substantially co-planar with an upper surface of the second compound semiconductor layer". (*Emphasis Added*). Applicants submit that

20 such a structure and/or limitation is not shown by Sakai, et al, and that therefore Sakai, et al., can not anticipate the claims.

The device of Sakai, et al. forms base contacts 16 (Fig. 5(g)) on base layer 4 between regrown crystal layers 14 and 15 and sidewalls 12 of a mesa transistor structure. Because the device of Sakai, et al., is a mesa-based structure, the base contacts 16 must extend above emitter layer 5 and above
5 regrown layer 14. The base contacts 16 of Sakai, et al., are not coplanar with the emitter layer 5. Sakai, et al., simply does not disclose that the base contacts are coplanar with the emitter layer.

The Examiner summarily concludes that the base contact and emitter of Sakai, et al., are "sufficiently close in height that they may be deemed to
10 constitute substantially co-planar". Applicants fail to note any disclosure corroborating that conclusion.

As best understood by Applicants, the Examiner appears to erroneously rely on the drawings, i.e., Fig. 2, for providing such disclosure. However, it is well settled that when a reference does not disclose that the drawings are to scale
15 and is silent as to dimensions, arguments based on measurement [or examination] of the drawing features are of little value. (*See Hockerson-Halberstadt, Inc. v. Avia Group Int'l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000) (*The disclosure gave no indication that the drawings were drawn to scale. "[I]t is well established that patent drawings do not define the precise
20 proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue."*)).

The Sakai, et al., reference itself is silent as to any possible degree of co-planarity of the base and emitter structures. The drawings are not disclosed as being to scale nor do they define the precise dimensions or proportions of the structures. The drawings, therefore, can not be relied upon as constituting
5 disclosure of any particular sizes or relative structural relationships, such as co-planarity. Thus, Sakai, et al., fails to disclose or suggest forming a third compound semiconductor material upon at least a portion of the exposed first active layer and at least partially within the opening having an upper surface that is substantially co-planar with an upper surface of the second compound
10 semiconductor layer, as recited in part by claim 1.

For the foregoing reasons, Applicants submit that Sakai, et al., fails to disclose each and every limitation of claim 1, and therefore does not anticipate claim 1. Accordingly, Applicants submit that claim 1 and claims 2-8 depending therefrom are now in condition for allowance, which is hereby respectfully
15 requested.

The rejection of claims 9 and 12-15 under 35 U.S.C. §102(b) as being unpatentable over U.S. Patent No. 5,698,871 (Sakai, et al.) was also maintained and made final. Claim 9 recites in part "a fourth compound semiconductor material at least partially within the opening, . . . the fourth compound
20 semiconductor material having an upper surface that is substantially coplanar with an upper surface of the third compound semiconductor layer". (*Emphasis*

Added). Thus, in that regard, claim 9 recites subject matter that is substantially similar to the subject matter recited in part by amended claim 1. For the same reasons given above in regard to claim 1, Applicants submit that Sakai fails to disclose each and every limitation of amended claim 9, and therefore does not anticipate claim 9. Accordingly, Applicants respectfully requests withdrawal of the rejection and allowance of claims 9 and claims 10-15 depending therefrom.

The rejection of claims 3, 4, 7, 10 and 11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,271,097 (Morris) in view of U.S. Patent No. 6,329,675 (Singh, et al.) was also maintained and made final.

Applicants respectfully point out that claims 3, 4 and 7 depend from claim 1, which is in condition for allowance for the reasons provided herein. Further, Applicants respectfully point out that claims 10 and 11 depend from claim 9, which is also in condition for allowance for the reasons provided herein. Accordingly, Applicants submit that claims 3, 4, 7, 10 and 11 are also now in condition for allowance and respectfully request same.

The rejection of claims 3, 4, 7, 10 and 11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,698,871 (Sakai, et al.) in view of U.S. Patent No. 6,329,675 (Singh, et al.) was similarly maintained and made final. Applicants respectfully point out that claims 3, 4 and 7 depend from claim 1, which is in condition for allowance for the reasons provided herein. Further, Applicants respectfully point out that claims 10 and 11 depend from claim 9,

which is also in condition for allowance for the reasons provided herein.

Accordingly, Applicants submit that claims 3, 4, 7, 10 and 11 are also now in condition for allowance and respectfully request same.

The rejection of claim 2 under 35 U.S.C. §103(a) as being unpatentable
5 over either Morris/Singh or alternatively Sakai/Singh as applied to claim 1 and further in view of Luo, et al., "Demonstration of 4H-SiC Power Bipolar Junction Transistors", Electronic Letters, 17th August 2000, Vol. 36, No. 17, pp. 1496-1497 was also maintained and made final. Applicants respectfully point out that claim 2 depends from claim 1, which is in condition for allowance for the reasons
10 provided herein. Accordingly, Applicants submit that claim 2 is also now in condition for allowance and respectfully request same.

For all the foregoing reasons, Applicants submit that the amended claims are definite and do particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Further, Applicants submit that no
15 combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in allowable form and in condition for allowance. Accordingly, Applicants respectfully request withdrawal of all rejections and allowance of the claims.

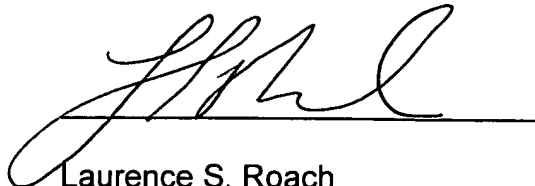
In the event Applicants have overlooked the need for an extension of time,
20 an additional extension of time, payment of fee or additional payment of fee, Applicants hereby conditionally petitions therefor.

The Examiner is invited to telephone the undersigned in regard to this
Amendment and the above identified application.

Respectfully submitted,

7-JAN - 2005

Date

A handwritten signature in dark ink, appearing to read 'LSR', is written over a horizontal line.

Laurence S. Roach
Registration No. 45,044

E-mail: Lsroach@rochester.rr.com

Laurence S. Roach, Esq.
Law Firm of Thomas R. FitzGerald
16 E. Main Street, Suite 210
Rochester, New York 14614-1803
Telephone : (585) 454-2250
Fax : (585) 454-6364